



***de maximis, inc.***

186 Center Street  
Suite 290  
Clinton, NJ 08809  
(908) 735-9315  
Fax (908) 735-2132

June 23, 2016

Jennifer LaPoma  
Ray Basso  
Walter Mugdan  
U.S. Environmental Protection Agency, Region 2  
290 Broadway  
New York, New York 10007-1866

**Via Electronic Mail**

**Re: Exposure Depth/Zone Dispute Resolution – 17-mile LPRSA RI/FS- Administrative Agreement and Order on Consent for Remedial Investigation/Feasibility Study - CERCLA Docket No. 02-2007-2009**

Dear Ms. LaPoma, Mr. Basso and Mr. Mugdan:

The Lower Passaic River Cooperating Parties Group (CPG) writes in response to the USEPA Region 2 (Region 2) June 7, 2016 Staff Statement of Position (Staff Statement) regarding the Exposure Depth/Zone Dispute Resolution. It is the CPG's understanding that this statement has been provided to Mr. Mugdan for his decision on this matter, along with the CPG's November 13, 2015 Dispute Resolution Statement and January 28, 2016 supplement. The CPG has a number of concerns with the Region's Staff Statement which are presented below.

First, the CPG disputes the Region's characterization in its Staff Statement that there are “substantial mischaracterizations of EPA's exchanges with the CPG” in the Dispute Resolution Statement prepared by the CPG. The Region should remove this unsupported, unsubstantiated, and highly prejudicial language from its Staff Statement.

Contrary to the Staff Statement, the CPG did not identify an absolute exposure depth of 2 cm. On page 2 of the CPG's Introduction, bullet 4 states:

*“It is important to note that the CPG has never claimed that all members of the benthic community are exposed to only the upper 2 cm of sediment. However, the important element of the EZ [Exposure Depth] Conceptual Site Model (CSM) is that those members of the LPRSA benthic community that constitute the majority of the food resource for benthic-feeding fish reside near the surface, in aerobic sediment (i.e., upper 2 cm). The CPG does not claim that all biological activity in the LPRSA is restricted to the EZ,*

**LaPoma, Basso & Mugdan**  
**Exposure Depth Dispute Resolution**  
**June 23, 2016**  
**Page 2 of 5**

*such that the BAZ equals the EZ. Rather, based on site-specific data, the CPG clearly has identified very limited instances where biological activity is found below the interval (i.e., greater than 2 cm) where most LPR benthic invertebrates reside and feed."*

Region 2 previously agreed with the CPG's position on this issue in support of a 2 centimeter exposure depth. Yet the Staff Statement fails to address Region 2's reversal of its prior position, as set out in its May 1993 draft scope of work for the Diamond Alkali OU2, that "the upper 2 centimeters of sediment correspond to the biological active zone and thus provide a good representation of exposure of biota to contamination". The Region does not provide any scientific literature or site-specific data to support changing its 1993 position of an exposure depth of 2 cm for the LPRSA.

Further, the Staff Statement relies on largely non-site specific data and literature to support its arguments while dismissing the available site-specific information that exists or could be collected as part of the 17-mile LPRSA RI. The Staff Statement discounts the 2005 site-specific Sediment Profile Image (SPI) survey data primarily for the following reasons: (a) it was not collected by Region 2; (b) it did not include specific data quality objectives for determining the biologically active zone or exposure depth; (c) the SPI data was only collected in a single survey, thus it has less validity than does data published from other regions of the country and collected in distinctly different habitat types and (d) it was collected a decade ago.

The Region's arguments are technically flawed and inconsistent with the manner in which Region 2 has treated other data. As Region 2 is aware, the SPI survey was collected as part of the Lower Passaic River Restoration Project (LPRRP) under the direction of the New Jersey Department of Transportation (NJDOT), one of Region 2's LPRRP Partner Agencies. Region 2 has accepted and relied on other data collected by NJDOT and has accepted other single surveys. In fact, the Region demanded in its April 2016 RI comments that the CPG include a detailed discussion and depictions of debris from a single 2005 side-scan sonar survey that was conducted by NJDOT. Moreover, the Region has required that the CPG utilize other older (>10 years) data and data collected without a specific data quality objective in other contexts. For example, Region 2 required the CPG to utilize older sediment quality triad data for reference conditions in the revised BERA that were not collected with a specific data quality objective for use on the LPRSA. Finally, the Region has previously ignored a number of the 'criteria' that it now applies to the SPI survey in its directives for human fish consumption rates for the LPRSA. Rather, it relies on the Burger 1999 Newark Bay and the Connelly et al. 1991 New York state-wide angler surveys rather than the CPG's LPRSA creel and angler survey (conducted less than 5 years ago for the entire 17 miles) providing yet another demonstration of the Region 2's inconsistent and unpredictable use of data for the 17-mile LPRSA RI/FS.

**LaPoma, Basso & Mugdan**  
**Exposure Depth Dispute Resolution**  
**June 23, 2016**  
**Page 3 of 5**

The Region's reliance on literature and non-site specific data, without adequately considering the relevancy of the information, is an insufficient basis for recommending a 15 cm exposure depth and results in technically unsound conclusions. For example, the Region's Staff Statement relies on burrowing depth of some species from a lake environment, which is fundamentally different from the LPRSA in terms of characteristics that influence benthic invertebrate species composition and behavior and which cannot be applied to the LPRSA. Contrary to the Region's reliance on non-site specific data, the CPG balanced the findings reported in the LPRSA SPI survey with three seasons of benthic community data collected throughout the LPRSA, and through the application of benthic community theories that are the underpinning of modern benthic community analysis. Dr. Germano, who conducted NJDOT's LPRSA SPI survey, along with Yale professor Don Rhoads, are the authors of seminal studies that have been the basis for research in benthic community structure and development for the past three decades. The stability of the benthic community, in terms of taxa present and general abundances, found by the CPG in the seasonal studies further supports the findings presented in the SPI survey authored by Dr. Germano.

Region 2 argued in its June 1, 2015 letter that one of two reasons for not considering an exposure zone shallower than 15 cm is that concentrations in a shallower layer, and specifically the top 2 cm of sediment, cannot be reliably calculated by the CPG's contaminant fate and transport (CFT) model and, by extension, Region 2's 8-mile ROD CFT model. Specifically, Region 2 claimed:

- the CFT model computes relationships between concentrations in the 0 to 2 cm layer and the 0 to 15 cm layer that are inconsistent with measurements; and
- the CPG's sediment transport (ST) model cannot reliably predict bed elevation changes at scales as small as 2 cm.

In its November 13, 2015 dispute resolution statement, the CPG rebutted these claims and demonstrated that the CFT model 0 to 2 cm layer concentrations are consistent with measurements and that the ST model (from both the CPG's LPRSA and Region 2's 8-mile ROD models) is fundamentally built on processes occurring at scales as small as 2 cm.

Ironically, Region 2's June 7, 2016 Staff Statement disregards the Region's earlier June 2015 claims about the model. Instead it retreats to the position that "*this dispute should [not] be broadened to a dispute about modeling, which, under the RI/FS Settlement Agreement is explicitly disallowed.*" Unfortunately, the Region misses the point. This dispute is not about challenging the modeling. Rather, CPG merely points out that the models used by the CPG and the Region for the RI/FS and for EPA's 8-mile ROD effectively address this issue and support the CPG's position. Instead of addressing the CPG's position on the ability of the models to address this depth exposure question, the Region

**LaPoma, Basso & Mugdan**  
**Exposure Depth Dispute Resolution**  
**June 23, 2016**  
**Page 4 of 5**

responds by giving the false impression that the CPG position rests entirely on a favorable comparison to a set of 8 samples in the top 2 cm, claiming this is an insufficient basis for evaluating the models calculations at the scale of 2 cm.

In any event, as a result of the extensive RI and modeling comments provided by the Region in April 2016, a window of opportunity now exists (since the Region's modeling comments alone will require approximately 1 year to address) to implement a benthic sampling plan consistent with the USEPA October 2015 guidance on determining the biologically active zone for the entire 17 miles of the LPRSA that will further assist the CPG and EPA in better understanding this issue. The CPG states again its willingness to revise and finalize the September 2015 draft QAPP in cooperation with Region 2 and conduct this fieldwork during the summer and fall of 2016. These site-specific data would provide further basis to refine the exposure depth(s) for the 17-mile LPRSA and would be available for inclusion into the revised 17-mile RI report and the revised bioaccumulation model.

As requested in a June 21, 2016 communication to Regional Counsel, the CPG requests a meeting with Mr. Mugdan, based on the significant issues raised herein with regard to the Staff Statement, to present its case for conducting additional field work to help determine exposure depth(s) of less than 15 cm and where appropriate as shallow as 2 cm prior to the issuance of his decision.

The CPG requests that this letter be included in both the Administrative Records for the 17-mile LPRSA operable unit of the Diamond Alkali Superfund Site and the 8-mile Record of Decision.

If you have any questions, please contact William Hyatt or me.

Very Truly Yours,  
**de maximis, inc.**



Robert Law, Ph.D.  
CPG Project Coordinator

**cc:**

Michael Sivak, USEPA Region 2  
Sarah Flanagan, USEPA Region 2  
James Woolford, USEPA Headquarters

**LaPoma, Basso & Mugdan**  
**Exposure Depth Dispute Resolution**  
**June 23, 2016**  
**Page 5 of 5**

Steve Ells, USEPA Headquarters  
CPG Members  
William Hyatt, CPG Coordinating Counsel  
Willard Potter, de maximis, inc.